

**To: Manufacturers of small scale generators,
Inverters and other affected parties**

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Open Letter from the Distribution Code Review Panel to manufacturers of type tested small scale asynchronous generators, inverters and other affected parties within the scope of EREC G59 and EREC G83 – vector shift immunity test.

Following the open letter issued by the Distribution Code Review Panel (DCRP) on 30/10/17, the DC0079¹ working group (WG) charged with considering the changes to EREC G59 and EREC G83 has been discussing the way forward for type tested small scale asynchronous generators.

The (WG) has noted that there are a number of factors associated with the effects of a transmission fault on small generators connected at LV or 11kV on distribution systems. These include the voltage depression through the fault, the vector shift on the fault inception and the reverse vector shift on fault clearance, and the effect that inverter output power might have on overall behaviour.

Included in the remit of the WG is mitigating the effect of frequency changes on the behaviour of generation. The WG's remit was extended to include recognizing that in addressing issues with rate of change of frequency protection (RoCoF), there are emerging problems associated with vector shift protection as an alternative to RoCoF protection, and that given these problems it is inappropriate to use vector shift protection in future.

However, dealing with all the issues associated with the effects of a transmission fault on small generators connected at LV or 11kV on distribution systems becomes a matter of fault ride through. Fault ride through, as a specific requirement for small scale asynchronous generators and inverters is not within the WG's terms of reference. The WG expects that the challenges of fault ride through for transmission and other high voltage faults will become separate development and consultation issue elsewhere in due course.

Accordingly the WG is likely to recommend, as per the formal consultation of 7 August 2017, that the use of vector shift as a specific loss of mains protection is not allowed and that the type test for small scale generation includes a single simple 50° vector shift immunity test, but without any specific or complex definition of accompanying test conditions, and that that should be implemented sometime during the middle/second half of 2018.

You should also be aware that the implementation of the EU Network Code "Requirements for Generators" will be more advanced by the middle of 2018. It is expected that all the GB requirements, including for type testing, will be published by May 2018, and compliance will be

¹ DC0079 is the Distribution Code Review Panel WG name; the WG was under joint GCRP/DCRP governance, but is now only under DCRP governance.

required for equipment commissioned on or after 17 May 2019. Progress with these developments will also be notified using the DCRP email circulation list (ie as is being used for this open letter).

The WG intends to consult again in the near future, primarily on the retrospective application of new RoCoF settings to existing distribution connected generation of all sizes, and the retrospective removal of vector shift protection. This consultation is also expected to cover the ongoing requirements for type tested small scale asynchronous generation as described above – ie a single 50° vector shift immunity test as originally drafted in the 7 August consultation as Option 1 of that consultation.

If you do have any comments or would appreciate discussing these proposals with the working group, please contact the WG chairman, Mike Kay at mkay@iee.org.

Yours Sincerely

David Spillett

Secretary to GB Distribution Code Review Panel

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